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ORIGINAL LECTURES.

CLINICAL LECTURE ON PUERPERAL CONVULSIONS.

BY G. WILDS LINN, M.D.

Delivered at the Philadelphia Hospital.

GENTLEMEN,—The specimens I bring before you this morning were taken from a patient who died of puerperal convulsions, and of whom we have the following history:

M. S., æt. 19, single, domestic, entered the hospital about four weeks since. She was apparently in good health until forty-eight hours ago, when she was suddenly seized by a convulsion. She was found shortly afterwards by my assistant, Dr. Maury, in a semi-comatose condition, but no symptoms of labor were present. A half-hour later she had a second convulsion. Upon catheterization only f ℥i of urine could be obtained, a portion of which on the addition of nitric acid completely solidified. A microscopical examination revealed a large number of granular and some hyaline casts.

An enema was given, which brought away a large quantity of fæces, followed by grs. lx of chloral per rectum and that by grs. xx repeated hourly for three hours, when, the convulsions still continuing, at intervals of half an hour chloroform was administered. I was sent for and arrived about five hours after the first convulsion, when I found the patient unconscious, pulse 96, small and compressible, respiration 25, temperature 100° Fahr., legs slightly œdematous, pupils dilated and insensible to the light, no urine in the bladder, fœtal heart-sounds 150 and very distinct, cervix undilated and rigid, with no indications of labor, vertex presenting, position L. O. A. Finding that the chloroform seemed to check the convulsions, I ordered its continuance.

Returning again to the hospital four hours later, I found that although the convulsions were not so frequent, yet they persisted in returning soon after the withdrawal of the anæsthetic. Seeing also that no symptoms of labor had appeared, I concluded to induce it by rupturing the membranes, dilating the cervix so as to allow of the application of the forceps, and deliver the child in the hope of checking the convulsions and possibly saving the mother. I prefer in such cases the rupture of the amniotic sac *before* introducing the dilators, in order by the partial withdrawal of the fluid to bring about contractions of the uterus. Having drawn about f ℥xvi of blood from the arm in order to facilitate the dilatation of the cervix, I succeeded in about twenty minutes in dilating it so as to allow the introduction of the extremities of three fingers, when suddenly the patient was seized by a convulsion so violent and protracted that I feared she would die of asphyxia. It had scarcely ceased when another even yet more violent followed, and the pulse became so rapid and feeble that it could not be counted. Recognizing the necessity of immediate delivery, I had recourse at once to bi-polar pelvic version, and delivered the child, which was already deeply asphyxiated, but which was fully restored and is now doing well. With the delivery of the child all tendency to convulsions ceased. The uterus was slow to contract, and it became necessary to use a weak (10 per cent.) solution of Monsel's preparation to keep it contracted. The patient had not been conscious from the time of the second convulsion, twelve hours before. Whisky was given subcutaneously, she not being able to swallow; hypodermic injections of digitalis were also given, and carbonate of ammonium per rectum; heat was applied to the extremities, and a constant oversight of the patient was directed. She rallied sufficiently to swallow, but then gradually sank, and died twenty-two hours after the first convulsion.

Time will not permit a detailed statement of the post-mortem appearances, but the meninges, lungs, liver, spleen, and kidneys were found congested, while the pericardium contained about six ounces of serum. The bladder did not contain a particle of urine. The wall of the left ventricle of the heart was slightly hypertrophied. The pathologist, Dr. Shakespeare, makes the following report:

"*Brain.*—Portions of the cerebrum, optic thalami, cortical and medullary structures of the cerebrum examined appear anæmic, the capillaries being unusually empty; no effusions into the brain-substance discovered.

"*Liver.*—Macroscopic appearance that of the early stage of cirrhosis. Extensive suggillations under the capsule. Substance congested, but no oil-globules present. Decided increase of cells along the radicles of the portal vessels and hepatic artery. Gland-cells normal.

"*Kidneys.*—Capsules of the glomeruli considerably thickened, and the intertubular network of fibrous tissue much increased; epithelial cells of tortuous tubes granular and nuclei indistinct; medullary portion normal; no fat-globules detected."

The facts that the urine drawn after the first convulsion entirely solidified on the addition of nitric acid, so that the test-tube could be reversed without its escape, and that there was no secretion of urine for twenty hours preceding death, were significant of very serious renal trouble. The pathologist's report would lead us to be-

lieve we had a case of chronic contraction of the kidney.

The uterus, as you see, presents no abnormal appearances except slight lacerations of the cervix, an occurrence almost constant when delivery has been rapidly accomplished with an imperfectly dilated cervix.

Two important questions engage our attention here. First. What is the etiology of puerperal convulsions? Second. What should be their treatment?

I.—Their etiology. Three theories have been advanced:

1. The irritative.
2. The toxæmic.
3. The mechanical.

I name the first irritative, because I know of no better term. In some persons there is a neurosis, a morbidly susceptible condition of the nervous system, an exaggeration of reflex excitability, giving rise to various disturbances. I have known a young woman who suffered for years from convulsions which were entirely relieved when a uterine displacement was corrected. On the removal of the pessary six months later the convulsions returned, and were checked upon its readjustment. Hysteria is dependent upon such a neurosis. Convulsions in children are, I believe, entirely analogous to those occurring in pregnancy, being produced in some cases by a foreign body in the stomach, by worms in the intestine, by teeth springing through an inflamed gum, etc. There doubtless exists in such cases a constitutional tendency (it may be inherited or acquired) to eclamptic seizures.

In these days, when pathology is making such rapid strides, it were rash to give unqualified adherence to any medical dogma, but I think this theory will yet be recognized as the *predisposing* cause of puerperal convulsions, the *exciting* cause being found in the condition of the uterus. This view is strengthened by the facts—first, that convulsions often appear *suddenly*, and when previous health was good; second, that they often cease immediately upon the delivery of the child, as in this case; third, that they are often increased by manipulations instituted for the delivery of the child, *e.g.*, by attempts to dilate the cervix.

The toxæmic theory, as its name indicates, would ascribe the convulsions to some poison in the blood. The advocates of this theory contend that they are due to urea which has not been excreted by the kidneys, and hence must term them uræmic convulsions. Frerichs, Braun, and Spiegelberg do not believe they are caused by urea as such, but by carbonate of ammonium arising from its decomposition. Of course it is assumed that some affection of the kidneys is always present, it may be structural or simply a congestion the result of pressure of the pregnant uterus upon the renal veins. Against this theory it may be urged that convulsions occur in some cases when the function of the kidneys is perfectly normal, and often after delivery when no pressure on the renal veins exists. It is true that when a lesion of the kidneys is present and the blood in consequence improperly depurated, the predisposition to convulsions is increased, and also their severity in the same ratio.

The mechanical theory advanced by Rosenstein is, that during pregnancy there is first hypertrophy of the heart, giving rise to increased arterial tension; and secondly, a hydræmic condition of the blood, hence an exudation of serum into the brain-tissues, which in turn compressing the vessels from which it exuded prevents the entrance of blood, and we have an anæmic condition of the brain acting as the direct cause of the convulsions. The same argument would explain and indeed demands the presence of albumen in the urine, also of œdema of the extremities, etc. In answer to this it may be said that it has not yet been satisfactorily proven that the heart is enlarged during pregnancy, and that albumen is not always an accompaniment of the convulsions, as it should be if, as we must suppose, congestion of the kidneys be inseparable from a cerebral congestion, or a serous exudation into the brain-tissues. If, however, there be a hydræmic condition of the blood during pregnancy, as is assumed by so many, it will intensify any predisposition to convulsions already existing.

II.—What should be their treatment?

If you do not follow blindly the dictum of empiricism, you will most likely base your treatment upon one or other of the theories mentioned. Time would not permit me, even were it wise, to dictate any special line of treatment. Each case must be considered by itself. The history of your patient should always be learned if possible, as it may serve as a guide to treatment. This patient had eight sisters, all of whom with herself had convulsions in

infancy, due, the mother thinks, to "teething." She also had convulsions supervening upon an attack of scarlatina subsequently. Her father has had convulsions, but we can find nothing definite as to their cause. I think all cases should be treated by antispasmodics, my opinion being based upon my acceptance of the irritative theory, and chief among these is chloroform. In most cases opium may be well added, and is best given in the form of hypodermic injections of morphia. While in the obstetrical wards at Vienna, I have known cases treated successfully by hypodermic injections of morphia alone. If the intestine be loaded with a fecal accumulation, elaterium or croton oil should be given, for, as already intimated, that alone may give rise to convulsions. When a patient is strong and plethoric, venesection may be resorted to to great advantage, not so much for the purpose of eliminating any blood-poison as to prevent congestion of the kidneys, lungs, spinal cord, and brain leading to secondary apoplexies. When it is found that these means used before labor do not check the convulsions, it should be induced. Prompt delivery *may* save the life of both mother and child, while if there be undue delay both may perish.

ORIGINAL COMMUNICATIONS.

RESEARCHES ON THE ANTAGONISM OF POISONS.

BY FRANCIS L. HAYNES, M.D.,

Assistant Surgeon to the Episcopal Hospital.

I. NICOTIN AND STRYCHNIA.*

THE experiments, one hundred and forty-three in number, were made on rats, cats, rabbits, and dogs. The poisons were invariably injected under the skin. The time given refers to the period of the injection of the poison; or, if more injections than one were made, the time is dated from the first injection.

In all cases in which an animal was killed by strychnia, or nicotin, or by both combined, the heart continued to beat for a variable time after respiration had ceased.

A. *On Rats.*

The ordinary stable rats were used. First, the minimum fatal dose and the physiological action of nicotin were determined, and, next, the action of nicotin and strychnia combined.

1. *Minimum fatal dose of strychnia sulphate on rats.*—This was found by J. Hughes Bennett (*Antagonism of Medicines*, London, 1875, p. 14) to be about $\frac{1}{60}$ of a grain of the pure alkaloid. The rats used by Bennett averaged about one ounce more in weight than those employed by the present writer. Of course the dose of the sulphate is proportionally larger.

2. *Physiological action and minimum fatal dose of nicotin on rats.*—When a small dose of nicotin ($\mathfrak{m}_{\frac{1}{1000}}$ to $\mathfrak{m}_{\frac{1}{600}}$) is injected into a rat, its respiration becomes labored, and, sometimes, noisy; and the animal shows signs of prostration, but is able to make voluntary motions. After larger doses ($\mathfrak{m}_{\frac{1}{600}}$ to $\mathfrak{m}_{\frac{1}{140}}$), convulsions occur, which may be either clonic or tetanic. The convulsions may be preceded, and are always succeeded, by more or less complete paralysis of motion. One convulsion may terminate life, but, generally, the animal survives through several convulsions. The respiration, after each convulsion, ceases for several seconds, and, sometimes, for more than a minute. When death occurs, it is through failure of the respiration. The heart invariably continues to beat for a time after respiration has ceased. Purging and urination are frequent symptoms.

From twenty-one experiments, the minimum fatal dose of nicotin for rats was found to be about $\frac{1}{160}$ of a minim (taking the average weight of the rats to be about ten and one-quarter ounces).

3. *Effects of nicotin and strychnia sulphate when injected simultaneously.*—Twenty-five experiments on rats were made on this subject. The following will serve as examples:

Experiment 28. A rat, weighing 11½ oz., received strychnia sulphate gr. $\frac{1}{66}$ and nicotin $\mathfrak{M}_{\frac{1}{330}}$. 1 min., panting respiration, semi-paralysis. 1½ min., violent convulsions, after which respiration temporarily ceased, then recommenced with a gasp. Prolonged exhaustion ensued. Several days after, strychnia sulphate gr. $\frac{1}{66}$ was injected alone, but without effect. After a second interval, nicotin $\mathfrak{M}_{\frac{1}{330}}$ was injected alone. It produced difficulty in breathing, and semi-paralysis, but no convulsions.

Exp. 44. A rat, weighing 6 oz., received nicotin $\mathfrak{M}_{\frac{1}{200}}$; it was followed in ½ min. by a tetanic convulsion, lasting two minutes, then by semi-paralysis. 4 min., strychnia sulphate

* Being an abstract of a paper published in the Transactions of the Philosophical Society of Philadelphia, 1877.

gr. $\frac{1}{102}$ was injected. 10 min., the semi-paralyzed condition continued. Reflex excitability increased. 14 min., tetanic, alternating with clonic, convulsions commenced, and lasted for eight minutes, after which there was almost complete paralysis. 33 min., tetanic convulsions, and death.

B. *On Cats.*

1. *The minimum fatal dose of strychnia sulphate in cats* was found to be about $\frac{1}{425}$ of a grain to the pound.

2. *The minimum fatal dose of nicotin in cats* is about $\frac{1}{150}$ of a minim to the pound. The physiological effects do not materially differ from those observed in the rat. An additional symptom is extremely violent vomiting, due to gastro-intestinal spasm (*Nasse*).

3. *The effects of the combined action of nicotin and strychnia sulphate on cats* resembled those observed in rats.

Exp. 79. A cat, weighing 2 lbs. 3 oz., received strychnia sulphate gr. $\frac{1}{288}$. No symptoms resulted.

Exp. 80. The same animal, one week afterwards, received nicotin ♏ $\frac{1}{88}$. The symptoms lasted about one hour, and were as follows: violent vomiting, staggering gait, contracted pupils, twitching of the ears, and rapid, noisy respiration.

Exp. 81. The same animal, one week afterwards, received by a single injection strychnia sulphate gr. $\frac{1}{288}$ and nicotin ♏ $\frac{1}{88}$. The respiration immediately became rapid and labored. In 30 seconds, clonic convulsions commenced, and lasted till death, which occurred at 2 minutes.

C. *On Rabbits.*

1. *Minimum lethal dose of strychnia sulphate on rabbits.*—This has been determined by Bennett, as regards the pure alkaloid, to be $\frac{1}{288}$ of a grain to the pound. Of course the dose of the sulphate must be proportionally greater.

2. *Minimum lethal dose and physiological effect of nicotin on rabbits.*—The minimum fatal dose was found to be about $\frac{1}{80}$ of a minim to the pound, or $\frac{1}{27}$ of a minim to a rabbit of average size (3 lbs). The essential symptoms caused by nicotin, as in the cases of cats and rats, are paralysis and convulsions, with profound disturbance of respiration. Vomiting does not occur; purging and urination are not as common symptoms as they are in the cat. Rabbits are generally killed by a single convulsion, whether caused by nicotin or strychnia.

3. *Effects of the combined action of nicotin and strychnia sulphate on rabbits.*

Exp. 118. A rabbit, weighing 3 lbs. 11½ oz., received strychnia sulphate gr. $\frac{1}{77}$, with no effect.

Exp. 119. The same animal received nicotin ♏ $\frac{1}{30}$. Marked prostration and difficulty in breathing resulted.

Exp. 120. One week after, the above-mentioned doses were given together to the same animal. For 22 min. nothing was noted, except difficult locomotion and prostration. Then two clonic convulsions occurred, in quick succession. 30 min., clonic convulsion. 31 min., tetanic convulsion, and death.

D. *On Dogs.*

1. *Effects of the combined action of nicotin and strychnia sulphate on dogs.*

Exp. 141. A dog, weighing 14 lbs., received strychnia sulphate gr. $\frac{1}{14}$. It was followed by marked increase of reflex excitability, lasting seventy-five minutes. The animal barely escaped a convulsion.

Exp. 142. The same animal, one week after, received nicotin ♏ $\frac{1}{20}$. The symptoms were difficult breathing and staggering gait.

Exp. 143. The same animal, one week after, received the two poisons combined, in the doses just detailed. 5 min., difficult respiration, great rigidity, vomiting. 15 min., severe clonic convulsions, lasting two minutes. 23 to 35 min., he had numerous convulsions, but none strong enough to cause him to fall. Then a powerful tetanic convulsion occurred; then the same condition of semi-convulsion was noted; and at 45 min., another tetanic convulsion, and death.

CONCLUSIONS.

1. Strychnia and nicotin are in no degree antagonistic poisons.

2. Strychnia increases the convulsive action and does not diminish the motor paralysis of nicotin.

3. Nicotin (even in paralyzing doses) increases the convulsive action of strychnia.

4. Both poisons cause death by paralyzing the respiratory apparatus. They may affect respiration in different ways, but the result is the same.

5. Animals may be killed by injecting together doses of the two drugs which, singly, are not fatal.

There is no reason to suppose that the above deductions are not applicable to the human animal. The symptoms of poisoning by the two drugs are identical in man and the lower animals. As regards strychnia, this is too well known to need further remark. In regard to nicotin, it is only necessary to refer the reader to the recorded cases of poisoning by that drug.

It may not be out of place to mention the fact that experimentation has proven that nicotin and strychnia show a remarkable

similarity in their intimate action on the nervous system, both being excitants of the spinal cord and paralyzers of the motor or efferent nerves.* For the explanation of these assertions, and for many other deeply interesting facts connected with this subject, the reader is referred to other sources.

CATHETER BROKEN OFF AFTER MAKING A FALSE PASSAGE, EXTRACTED BY PERINEAL SECTION.

BY J. H. POOLEY, M.D.,

Professor of Surgery in Starling Medical College, Columbus, Ohio.

MARCH 15, 1877, I was requested to see A. L., æt. 19, as soon as possible. This young man had been sick nine or ten days with pneumonia. The day before I was summoned he was seized with retention of urine, for which his attending physician introduced a catheter, and in doing so he met with some difficulty and caused a slight hemorrhage. The next day,—that is, the day I saw him,—on attempting again to use the catheter, more difficulty was encountered, and in some part of the manipulation the catheter broke, and six inches of it was left, as the doctor supposed, in the bladder or urethra, or both, and, without making any efforts at extraction, he sent to me for advice and assistance.

I found the patient in a very feeble condition, with pneumonic consolidation of the upper lobe of the left lung, but did not particularly examine into his general condition.

There was some blood oozing from the urethral orifice, and in the perineum, just behind the scrotum, a hard body could be obscurely felt, supposed to be the end of the broken catheter. Examination through the rectum afforded no assistance in the diagnosis.

A pair of slender forceps could be easily passed down to the point where the foreign body was felt in perineo, but did not come in contact with it. It was therefore decided to extract it by external incision.

Owing to his diseased and feeble condition, an anæsthetic was not administered. He was placed on a firm table, in a good light, in the lithotomy position, and I proceeded to cut carefully down upon the foreign body. It was easily reached and extracted through a very small incision in the urethra; no urine followed.

Afterwards I passed a No. 12 catheter with perfect ease, almost without the patient knowing it, and drew off a quart of urine.

The broken catheter extracted was the curved half of a No. 8 silver instrument, six inches in length, showing the mark of a deep indentation at the point where it broke, which the doctor said was there when he used it. It had not passed into the bladder at all, but through a false passage in the urethra, and so between the bladder and rectum.

The patient recovered from this little operation without any trouble. Urine in small quantity passed through the wound for a day or two, after which it ceased, and the wound soon healed.

Remarks.—I have thought this case worth reporting, partly on its own account, but mainly for the lesson it conveys. Medical men who comparatively seldom resort to the use of urethral instruments can scarcely be too often reminded that, simple as it seems, catheterism is an important operation. That it is too often bunglingly done, in such a way as to cause pain and trifling bleeding, both utterly unnecessary in uncomplicated cases, has been proved to me over and over again by the fears of patients when it was proposed, and their pleased surprise when it was accomplished without the least pain. To say nothing of the carelessness of using a bent or half-broken instrument, the present case illustrates two or three points in the use of the catheter to which attention cannot too often be directed.

In the first place, physicians habitually choose too small an instrument, supposing, no doubt, that it is easier of introduction,—an entire mistake.

Less than No. 12 is never needed for a healthy adult urethra, and such an instrument or one still larger will pass with more ease and certainty than a smaller size. In addition, small inflexible instruments are always dangerous, the smaller the more so. Another point, too often neglected, is the proper position of the patient. How often have I seen a physician reaching over, to his own great inconvenience, attempting to catheterize a patient whose hips were sunk deep down into the middle of a soft bed, and who was insufficiently exposed for the purpose, and wondered almost that the thing could be done at all! If the patient had been brought quite to the edge of the bed, his pelvis resting on a firm support or slightly elevated, and his person well uncovered, he would have been saved much pain and his doctor much trouble. And then, in spite of all the anathemas from all the surgical chairs in the country, it seems as though inexperienced manipulators will use force. Nothing can con-

* H. C. Wood's Therapeutics, pp. 284, 340, 341.

vince them that if the instrument does not pass at once they must not make it pass *vi et armis*, and they are constantly exerting an amount of force with urethral instruments at which an expert would tremble.

These remarks will seem to many like bald and tiresome truisms; but the case I have related shows that there are still some by whom they may be read and pondered with profit.

NOTES OF HOSPITAL PRACTICE.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

SERVICE OF PROF. AGNEW.

Reported by H. R. WHARTON, Resident Physician.

TREPHINING FOR DEPRESSED FRACTURE OF THE SKULL CAUSING EPILEPSY.

JOHN S., æt. 20 years, when nine years of age received a blow on the head from a pickaxe which caused a depressed fracture of the skull on the line of the sagittal suture, about two inches posterior to its junction with the coronal suture. He was stunned by the blow, but soon regained his consciousness. Water-dressings were applied to the wound, and the patient was given bromide of potassium. He recovered rapidly, and showed no bad symptoms until three years after the accident, when he had several convulsions. These attacks at first occurred at intervals of two or three weeks, but gradually increased in frequency up to the time of his admission into the hospital, April 17, 1876, when he had as many as fifteen to twenty convulsions during a day. His friends state that for the last few months there had been some impairment of his mental faculties.

April 19.—Patient etherized, and the skull exposed by a valvular incision. A large trephine was applied, and a disk of bone removed, which included all the depressed fragments; the dura mater was not injured. Water-dressings were applied and kept continuously on the wound until April 27. The patient was given calomel, gr. ¼, every four hours, liquid diet, and kept absolutely quiet. Evening temp. 98.3°; P. 100.

April 20.—Patient rested well; slight discharge from wound. Evening temp. 101.3°; P. 132.

April 23.—Patient suffers no pain; rests well; drainage-tube introduced into wound; small amount of pus discharged.

April 24.—Calomel stopped; patient somewhat nervous towards night, and feared he was about to have a convulsion; given bromide of potassium, gr. xl, and rested well.

May 15.—Patient has presented no bad symptom; drainage-tube still kept in the wound; walking about.

May 20.—Discharged; wound almost healed; only a few drops of pus discharged through the drainage-tube daily. After his return home he was subjected to much excitement, and the drainage-tube was displaced.

May 23.—Had three attacks of convulsions; his physician states that he found the wound distended with pus; a probe was introduced and this was evacuated, and the drainage-tube replaced; after this he had no further trouble.

July 15.—The wound has entirely healed, and the patient has had no more convulsions.*

TRANSLATIONS.

TWO CASES OF ACUTE BULBAR PARALYSIS.—While the symptoms of bulbar paralysis in its chronic form are, since Duchenne's description, familiar to us, cases of the acute form of this affection of the medulla oblongata have only rarely been observed, and have still more rarely been described. And this, although an independent affection of the medulla, or a disease of the spine or brain in which this is involved, gives rise ordinarily to very striking symptoms. To the very meagre symptomatology of the affection which we have heretofore possessed, Leyden (*Arch. f. Psychiatrie*, Bd. vii., Heft 1) adds two recent observations of his own made in Strasburg.

In both cases the symptoms appeared suddenly, and were sufficiently characteristic to enable the affection to be distinguished. In the first case, for instance, paralysis of deglutition, impairment of speech and respiration, occipital headache, great weakness and abnormal sensations in the extremities; in the second case there was only paralysis of deglutition, impairment of speech, together with vomiting, singultus, fits of coughing, the extremities showing decided paresis. As the post-

* May 5, 1877. Patient not heard from; promised to write if he had more convulsions.

mortem examination subsequently showed, these cases belonged anatomically to the rarest form of myelitis medullæ oblongatæ; the centres of infarction were relatively small. In the first case the clot was found in the right half of the medulla oblongata, and probably arose from some heart trouble. In the second case a clot about the same size was found in the medulla oblongata, which apparently was situated exactly in the middle and in its greater circumference involved the entire raphé. The clot was, in all probability, the result of disease of the blood-vessels, and was connected with softening of the medullary structure. x.

PILOCARPIN.—Fronmüller (*Centralbl. f. Med.*, 1877, p. 128) found that pure pilocarpin, a reddish-brown extract of weak alkaline reaction, imperfectly soluble in water, easily dissolved in alcohol, in pill form, .06 to 0.9 grm. (.9 to 13.5 grs.), produces the same effect as an infusion of 5 grammes (80 grains) of jaborandi leaves, even in relation to the unpleasant after-effects. The muriate of pilocarpin, a crystalline substance of acid reaction, easily soluble in water, is, according to F., very well adapted to subcutaneous injection. He injected .05 to .09 grm., and observed after a few minutes the well-known effects of jaborandi, profuse perspiration and salivation, lasting for hours, flow of tears, contraction of the pupils, weakness of vision, particularly for near objects, nausea, and even slight vomiting, and finally transitory increase of frequency in pulse and respiration. x.

SOME ACCIDENTS PRODUCED BY THE INFLUENCE OF PICRIC ACID.—A. Delpech (*Annal. d' Hyg. pub.*, Sept. 1876; *Centralbl. f. Med.*, 1877, p. 128) gives the case of two women employed in making artificial flowers, and particularly the green stems. These women, after using the substances employed in this manufacture for some days, experiencing during this period a bitter taste in the mouth, and noticing at the same time that the four fingers of the right hand had become colored yellow, were attacked by severe ulcerating stomatitis, which after a change of employment disappeared. The cause of the affection seemed to be in the circumstance that the green coloring-matter employed was composed of a mixture of picric acid and Berlin blue, and that in twisting the paper into stems, during which the fingers were frequently put into the mouth and moistened with saliva, the picric acid was brought into contact with the mucous membrane of the lips and oral cavity, and thus originated the local affections. x.

URINE IN INFANTILE ATROPHY.—Parrot and Robin (*Arch. Gén.*, 1876, pp. 129–292) state that the urine of children in this condition is citron-colored or very dark yellow, its odor strong and characteristic, and it is usually diminished in quantity. Specific gravity 1009–1012.5. It is always cloudy or milky, and is only clear near the conclusion of chronic cases when these are about to terminate in recovery. The sediment, which is almost always present, contains variously-formed cylinders, fatty elements with tinted nuclei, mucus, colored uric acid, urates in a crystallized or amorphous condition, pigment, etc. The reaction is always acid, sometimes strongly so. Proportion of urates decidedly increased. Uric acid is found in notable quantity. The coloring and extractive matters are also increased in amount. Albumen is always present, though in very variable quantity. Sugar may also frequently be detected. x.

NASAL POLYPI OF THIRTY YEARS' DURATION; SECTION OF THE NOSE; EXTIRPATION; CURE.—Dr. Notta (*L'Ann. Méd.*, 1877, p. 40) reports the case of a man, 67 years of age, who had suffered with nasal polypi, which had grown gradually during thirty years, and had during the previous year or two entirely obliterated the nasal passages. The external orifices of the latter, enormously dilated, were filled with immense tumors, pushing out more than a centimetre (one-third inch) beyond the end of the nose. The tumors were resistant to pressure, giving the sensation of fibrous tumors. The soft palate was pressed forward, and the recurved finger introduced into the back part of the mouth could distinguish a number of mobile tumors filling the nasal fossæ and pressing against one another. For six months the patient had scarcely been able to sleep. The operation consisted in making two vertical incisions, starting from the inner angle of the eye, and following the naso-jugal furrow, terminating in the lower portion of the alæ nasi and extending through the entire thickness of the soft parts. With a pair of Liston's forceps applied in this incision the apophyses of the bones belonging to this portion of the nose, that is, the ascending process of the

superior maxilla on either side, were separated, and then the septum nasi and vomer, the latter reduced to a thin membrane, were cut through with a pair of strong scissors. The nose being then turned up and held out of the way by an assistant, a large cavity was seen, filled with polyps, which were torn away with strong forceps. The larger number were implanted upon the superior wall of the nasal fossæ; although many were adherent to the lateral walls. The turbinated bones seemed almost destroyed, and the nasal fossæ enormously dilated. The polypi which filled the nares were indurated; the others were mucous, but more consistent than common. The volume of those extracted was equal to that of a turkey's egg. After ascertaining that no more polypi remained in the nose, the portions turned aside were replaced and secured by means of twisted metallic sutures. In spite of an attack of erysipelas, the patient made a good recovery. X.

UNION BY FIRST INTENTION UNDER COTTON DRESSINGS (*La France Médicale*, March 31, 1877).—At a recent meeting of the Académie de Médecine M. Desormeaux reported the results which he had obtained by dressing with cotton wadding all the wounds which had been under his care, and the sides of which were capable of being approximated. In every such case he claimed to have procured union by first intention, and also to have avoided anything approaching purulent infection, no matter what may have been the sanitary state of the hospital at the time, and in this way to have greatly diminished the mortality after amputation. J. W. W.

TWO CASES OF METRORRHAGIA CURED BY INJECTIONS OF ERGOTIN (*La France Médicale*, March 31, 1877).—Dr. Stefano Tonoli reports the case of a girl, aged 25 years, who menstruated for the first time at the age of fifteen, and who had since then constantly had excessive hemorrhage at each epoch. When she came under the author's care she was suffering from a menorrhagia which had persisted for more than a month. There was profound anæmia. The skin was pale and cold, and the vital forces were greatly depressed. No organic lesion could be discovered. Eighteen to twenty and thirty grains of the perchloride of iron, with cold applications, were administered without producing any effect. Two hypodermic injections into the arm were then given, the solution used containing about fifteen or twenty grains of ergotin to the drachm of a mixture of water, glycerine, and alcohol. The exact quantity employed is not mentioned, but the hypodermic syringe was used full and emptied each time. During the next twenty-four hours four more injections were given, and the following day the hemorrhage was decidedly less, and at the end of five days had ceased entirely. No symptoms of ergotism were observed. The next month there was again abundant menorrhagia, which was controlled by five injections of ergotin. Four months later the patient reported herself as having continued well and menstruated normally.

The second case was that of a woman, aged 32 years, who was similarly affected. Injection of twelve grains of ergotin on the first day, and of eighteen grains on the second day, put a stop to the hemorrhage, which, however, returned after an interval of ten days. A repetition of the injections speedily removed the trouble, which had not reappeared at the end of two months. In this case the points of puncture became painful, and the patient experienced decided malaise, with tremors in the vertebral column and in the articulations of the lower extremities.

J. W. W.

THE BIOLOGICAL POSITION OF THE PHOSPHATES (*La France Médicale*, March 21, 1877).—At the séance of the Société de Médecine Pratique, held on the 1st of February, 1877, M. Joly read a paper of which the following is a résumé:

1. There are found in the organism five different species of phosphates: the phosphates of iron in the red blood-corpuscle, the phosphate of sodium in the liquor sanguinis, the phosphate of potassium in the nervous system, the phosphate of magnesia in the muscles, and the phosphate of lime in the bones.

2. The presence of the phosphates is intimately connected with all the vital acts: they preside over the nutritive phenomena and muscular activity, and have depending upon them the manifestations of intelligence.

3. Sickness or disease and dephosphatization are inseparable terms.

4. The phosphates have one principal biological function, which is identical with them all, and which consists of a stimulation by means of the phosphoric acid which

they continually set free by their decomposition.

5. They have secondary effects due to the nature of their bases, according to which they act as a mechanical support for living tissue, as agents in the production of physical liquefaction or solidification, and as chemical solvents.

6. The biological importance of the phosphates is proportionate to the quantity which is contained in the red blood-globule. J. W. W.

ANÆSTHESIA OF THE SKIN OVER THE DELTOID REGION AS A SIGN OF SUBSEQUENT PARALYSIS IN DISLOCATION OF THE HUMERUS (*La France Médicale*, No. 9, p. 69).—M. Anger reports the case of a patient who fell and produced a subscapular luxation of the humerus. The following day there was complete anæsthesia of the skin over the deltoid region, limited above by the acromion, below by the humeral insertion of the deltoid. It came on suddenly, was not accompanied by any pricking sensations, and was believed to be due to some injury of the circumflex nerve. The prognosis of paralysis of the deltoid was made. The dislocation was then reduced, and it was found that the cutaneous anæsthesia continued, and that there was complete loss of power to elevate the arm. Six days later the patient died of pulmonary congestion, and at the autopsy the nerve, lying between the scapula and the head of the humerus, was found to be contused at the point where it divides (lower border of the subscapularis), and a quantity of effused and coagulated blood was found within the sheath. There was also a large subcutaneous ecchymosis seated over the great pectoral muscle, and the capsule of the articulation was torn below and internally. M. Anger concludes from this case that if before or after the reduction of a dislocation of the shoulder there should be anæsthesia of the skin over the deltoid region, a lesion of the circumflex nerve may be asserted to exist. J. W. W.

VOMITING IN PHTHISIS.—Dr. Verda (*Thèse de Paris*, 1876) regards vomiting in phthisis as, in a great majority of cases, a reflex phenomenon. Those attacks of vomiting which we call mechanical—that is, those brought on by fits of coughing—take place by a purely physical mechanism. The symptom of vomiting may occur at any period of the disease, either in the early stages, when it constitutes an initial phenomenon (ganglionic engorgement); sometimes, and most frequently, some time after the invasion of the disease (gastric lesions), or even during the latter stages, and as a sign of approaching death (gastric lesions, tuberculous meningitis). It is less frequent than is generally supposed. Its etiology may be included under four heads, which, in the order of their frequency, are as follows. 1. Lesions of the gastric mucous membrane. 2. Compression or lesion of the pneumogastric nerves as a result of ganglionic engorgements of the mediastinum and neck. 3. Fits of coughing. 4. Neoplastic processes at the base of the brain or of the meninges (rare). Finally, from a prognostic point of view, the appearance of this symptom should always be considered of grave import, and it should be energetically combated, for its persistence aggravates considerably the bad condition of the patient. —*Bull. Méd. de Thérap.*, 1877, p. 142. X.

PERITONEAL EXUDATION ABOVE THE LIVER: PERFORATION OF RIGHT LUNG, WITH SYMPTOMS OF PYOPNEUMOTHORAX OF THE RIGHT SIDE (*Berliner Klin. Wochens.*, No. 5, 1877).—A woman was brought into Prof. Leyden's ward, suffering from fever (temperature, 103.5°; pulse, 120; respiration, 32), pain in lower portion of chest on side and posteriorly, also pain in neck, difficulty of deglutition, weakness, loss of appetite, thirst, and diarrhœa; thorax prominent in lower portion of right side; respiration almost purely costal, and was difficult. Percussion showed anteriorly tympanitic resonance on right side down to the level of the intercostal space below this dulness; posteriorly, dulness from angle of scapula down. Auscultation showed diminution of vesicular respiration, with subcrepitant râles above. No respiratory sound heard from fourth rib down. The heart was somewhat displaced towards the left. The abdomen was particularly prominent over the region of the liver. Some days after admission, amphoric respiration, with succussion-splash, could be heard. The diagnosis of *right pneumothorax* was made, and some days later punction was performed. The patient, however, succumbed during the operation. The post-mortem examination showed a large abscess, which had originally formed between the liver and the diaphragm. Very full notes of the case are given, as well as of the post-mortem examination. Y

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, MAY 12, 1877.

EDITORIAL.

OUR DEAR COUSIN.

THE believers in evolution are receiving much comfort from the behavior of the trophy of the German African Exploration,—the living gorilla now in Berlin. He appears to take to civilization with the avidity of a Japanese Mikado. The Berlin correspondent of the *British Medical Journal* has been received by him as a personal friend, and is enthusiastic over his frolicsome and friendly games, his grave courtesy on occasions, and his child-like good-nature and docility. He is said to spend his time "alternately drinking claret and water out of a glass with excellent grace and propriety; then turning over head and heels, shaking hands at frequent intervals; then drumming on his breast and on the floor; chasing a little boy and a dog (his two favorite companions) round the room; handing wine to his cousin; and swinging on a trapeze, seated by the side of his boy-friend."

The correspondent describes the anthropomorph—"as like a little negro boy in the face as a being not absolutely human can be; his hands are most startlingly human; and in many of his childish ways and solemn courtesies he is almost more than 'anthropomorphic.'" Herr Gorilla is most affectionately disposed to his cousin the chimpanzee, sharing spontaneously with him his favorite tipple, "most gravely and politely," we are told, tilting over his glass half full of wine and water to "Tschego," and gravely watching his enjoyment of it. It is rumored that the London Zoological Society have offered $10,000 for him, but that the Anti-Vivisection Society have applied for an injunction, under the law forbidding buying and selling of human beings. Fortunately for the Zoological Society, Dr. H. Bolau, of the Hamburg Zoological Gardens, has recently had the opportunity of dissecting three gorillas, who arrived at the city well preserved and in good spirits. He triumphantly proved that the liver does differ, as previously affirmed by Huxley and Flower, from that of man,—having the lateral fissure scorned by the hepatic viscus alike of the man, the chimpanzee, and the gibbon, but adopted by that of all the lower monkeys. The lawyers have, therefore, a fair opportunity for a case; and it seems hardly probable that the injunction will be granted.

EUROPE, and, consequently, America to some extent, is threatened with a great danger, magnified by the Turco-Russian war, whose development may decide the fate of the Turkish Empire. The plague has appeared at Bagdad, and it is feared with reason that this is but the prelude to a general breaking forth of the disorder in the great centres of Persian population, and its passage along the lines of travel through the Red Sea and the Suez Canal. The prospect for cholera is said to be even more gloomy. The epidemic which started in India in 1875 and extended northward through the British possessions, in 1876 spread throughout Afghanistan, and at the close of the year (the latest accounts) was at the Persian frontier. The natural course of this death-wave seems to be onward through Persia to the Russian territories of the Caspian; and with the gathering and transporting of troops its pace may be quickened until it sweeps into the seat of war like an earthquake tidal wave.

DEATH FROM NITROUS OXIDE.—A death has occurred in Manchester, England, from nitrous oxide. The only important particulars reported are that it happened in a man after the extraction of some teeth, and that the verdict of the coroner's jury was,

Died from syncope during the administration of nitrous gas for the extraction of teeth whilst laboring under fatty degeneration of the heart.

PROFESSOR JOHN WOOD has accepted the chair of Clinical Surgery in King's College, made vacant by the death of Sir William Fergusson.

CORRESPONDENCE.

LONDON LETTER.

THERE is comparative quiescence in the medical world, as this is the interval betwixt the winter and summer sessions. The chief matter of medical interest recently has been the renewed discussion betwixt George Johnson, of King's College, on the one part, and Sir William Gull and Dr. Patton, of the London Hospital, on the other, as to the changes which go on in the blood-vessels in chronic Bright's disease. In May, 1872, the two latter gentlemen recorded a series of observations on the cases commonly called chronic Bright's disease with contracted kidney. They then affirmed that there were not only the well-recognized cases with contracted kidneys and hypertrophied heart and diseased vessels, but that there were also others in which the changes in the heart and blood-vessels were found, with the kidneys only slightly affected, and that there even were cases where these changes were found without the kidneys being affected at all. They contended that the condition was not essentially a renal one, but that the change was a more general one, in which the kidneys were more or less involved. On the other hand, Professor George Johnson maintained that the change commenced in the kidneys, which became diseased in the first place, then the blood became imperfectly depurated. This impure blood excited arteriole spasms, which in time led to thickening of the muscular wall of the arterioles, and obstructed blood-flow, which in its turn induced hypertrophy of the left ventricle to drive forward the blood in the face of the obstruction offered.

Sir William Gull and Dr. Sutton reopened the contest by an elaborate series of observations on the blood-vessels of the spinal cord, and exhibited a large array of microscopic sections.. They showed that the surface of the cord was bounded by connective tissue, part of its pia mater, and that processes proceeded therefrom, penetrating into the white matter of the cord. These unite to form a connective-tissue plexus in which the nerve-tubules lie.

There is thus a normal basis for disease to commence upon. In disease these normal meshes become thickened with fibroid material, while homogeneous masses grow up among them. The vessels become thickened too, especially the part exterior to the muscular layer, which becomes covered with coarse and dense-looking fibres, among which are to be seen numerous spindle-shaped nuclei. The muscular layer of the vessels may become thickened, or it may become atrophied. These fibroid changes in the cord are closely allied to the changes in the kidneys. In each it is found in largest quantity where the normal connective tissue is most abundant. In each it progresses from without inwards, and in each it extends from the arterioles and capillaries into the surrounding connective tissue. The growth of this fibrous material in each organ contracts and compresses the surrounding tubules, atrophying or destroying many of them, but at the same time leaving others comparatively normal. In consequence of this last, both cord and kidney possess considerable functional activity in the midst of advanced disease. Very frequently acute disease is set up in these chronically altered parts, and the end soon supervenes.

The difficult part of the subject is that these changes in both organs were not always found together, sometimes one organ being distinctly affected while the other remained quite normal. Their conclusion was as follows. Fibrosis of the cord may occur coincidently with fibrosis of the kidney; or it may be in advance of fibroid change in the kidney; or it may occur as part of a general fibrosis, altogether independent of kidney disease.

Professor George Johnson criticised several points, to which no reference can be made here, and then proceeded to expound his views. He thought the primary change consisted of destruction of the epithelial lining of the renal tubules, which was thrown off as casts, atrophy and contraction of the tubules following. Some tubules got plugged up, and then, becoming distended by fluid, cysts were formed in the kidney. These changes were set up by the irritation caused by imperfectly assimilated products of food, or by alcohol or other causes. He thought the changes seen in the cords described might be accounted for by the local irritation caused by imperfectly depurated blood, when the kidneys had become incompetent to perform their functions properly.

Dr. Dickenson, of St. George's Hospital, gave it as his opinion that besides this wasting in the kidney there was also a growth of connective tissue. This was evidenced by the fact that numerous nuclei were to be found, showing that the growth was but of recent origin. He thought that in this case each saw different sides of real truth. That the muscular wall was always thickened in kidney disease was clearly not an accident. Arterio-

capillary fibrosis was equally well proved, and there was a thickening of the walls with it. The arterioles were thickened in all cases where the function of the kidney was impaired, whatever the form of disease. Dr. Mahomed, of St. Mary's Hospital, said that high arterial tension was found in the arteries of gouty persons and high livers. Prolonged high tension must lead to thickening of the coats of the blood-vessels. Dr. Gowers, of University College Hospital, showed a living case (a female) where the retinal arterioles were contracted, with an hypertrophied heart, she being the subject of chronic Bright's disease. The general opinion formed from this discussion seemed to be in the direction that there was much to be said for both sides of the question. Dr. Johnson has succeeded in showing that arteriole hypertrophy is a consequence of renal disease; while the other side have demonstrated that there are general changes in the blood-vessels often accompanied by distinct renal disease (but not invariably so), which are allied to senile changes, and which point to a wider implication than Dr. Johnson seems inclined to admit. The progress of this discussion shows that the opposed views are approaching and not getting further away from each other. Certainly the general knowledge of the subject is much advanced thereby. The late Prof. Laycock, of Edinburgh, used to teach that general diseases, as gout, found their seat in the tissues developed from the different layers of the embryo,—a view which will be found fruitful when followed out systematically.

We seem to be far from having reached the end of the therapeutic art; indeed, it would appear that we are but on the threshold of a new line of inquiry of a startling character. A telegram in the *Daily News* in Easter week briefly stated that a number of medical gentlemen had waited upon a M. Burg, in Paris, to witness the effects of the application of metals to the external surface of the body. M. Charcot, with a number of eminent confrères, and Prof. Ferrier and Mr. Ernest Hart, witnessed M. Burg's novel measures. These consist of the application of a band of disks of metal to the skin of certain patients. These patients were affected with semi-anæsthesia, and there was not only loss of sensation upon one side, but there was also a fall of temperature. M. Charcot passed long needles right through the thigh, the cheek, and down the web of the fingers of the affected side, and twisted the needle about most effectually without the slightest evidence of sensation being produced. In addition to this, there was no bleeding from the orifices. The test was very thorough, and was applied to some new patients as well as those who had been some time under care. After this belts of disks of various metals were applied to the patients for a quarter of an hour, when a total change was found to have been induced. The slightest prick of the needle not only elicited evidences of acute sensation, but the pricks bled readily, and the temperature rose. The results were only brought about when the proper metal for each patient had been applied. Thus, in one iron disks would induce the change; in another, copper disks; while in others silver, platinum, or gold disks were required; one metal alone having this curious power over each patient. The possibility of the whole thing being merely an hysterical affair was negatived by the nature of the experiments made. If the metal disks were covered on the side applied to the skin with a thin covering of wax, out of the patient's sight, so that there could be no collusion, no effects were produced; demonstrating that the effects are not the mere result of imagination. The most curious and inexplicable part of the whole affair has yet to come. After these metal belts had been wound round the limbs of the affected side, and that side had been restored to its normal condition, the anæsthesia passed over to what had been before the sound side. Needles could be passed into the tissues without eliciting pain or drawing blood, just as was the case before with the affected side. The whole thing appears incredible if it were not supported by the testimony of persons of unimpeachable veracity, who themselves admit that they are not provided with any hypothesis to explain these extraordinary phenomena. A commission has been appointed in Paris to thoroughly investigate the whole subject, and to subject the patients to every possible test, in order to establish or explode the matter. For many years M. Burg has been regarded as an object of suspicion as to the reality of his experiments and the bona fides of his operations, but at last the matter is to be cleared up. The practical value of thus finding out the metal to which a patient is susceptible is that it furnishes a clue to the internal administration of remedies. For instance, M. Burg had a patient suffering from persistent aneurism where the administration of iron was of no avail. By means of the application of these belts of disks it was ascertained that gold was the metal for which this patient had an elective affinity, as it were, and the administration of gold internally soon led to a perfect cure. If these observations be corroborated and confirmed, even the most recent treatises on therapeutics will have to be rewritten, and our therapeutic measures in many respects simply revolutionized. The progress of the inquiry instituted by this commission will be watched with the keenest attention by the whole of the profession.

The plan of investigating phenomena thoroughly seems to be spreading throughout all classes. Recently I gave an account of some guardians in Yorkshire who preferred a constrained residence in York Castle to putting the Vaccination Act in force in their union.

After a brief stay they compromised the matter and were released. The guardians of an adjoining union were also much perturbed by the statements of resident anti-vaccinators, and so determined to investigate a few of the strongest cases of disease alleged to have been produced by vaccination. The moment these cases were subjected to careful handling they crumbled down in the most remarkable manner, and the anti-vaccination people were "hoist with their own petard." The perverse opposition to this act by a large section of the population in the crowded manufacturing districts of Lancashire and Yorkshire is curious, as the agitation is much less pronounced elsewhere. Even severe attacks of smallpox, in which the unvaccinated invariably suffer most severely out of all proportion to their vaccinated neighbors, are ineffectual in producing any change of opinion in these blinded and ignorant proletaires, animated by a truly British antipathy to all coercive laws, and lashed forward by printed statements of unparalleled mendacity.

In the Croonian Lectures delivered before the Royal College of Physicians by Dr. Braxton Hicks, that authority maintained that in the female infant from the earliest period could be noted a tendency towards that sexual development usually attained at puberty. He puts it, "The organs of generation in their healthful state, from the earliest intra-uterine life till the full period of puberty, are in a state of progressive development." Ovulation and menstruation are too commonly supposed to begin together, whereas in reality ovules are discharged at a period long anterior to the appearance of menstruation,—in fact, in early childhood. He holds that the difference of sex in a child is manifest from its first appearance; these differences are but intensified at puberty. Even sexual feelings exist from early infancy, and only become highly manifested at puberty. He differs from Professor Virchow as to womanliness being essentially dependent on the presence of ovaries,—Virchow says, "Take away these, and one has a man-woman,"—and states that he agrees with Puech, that in reality woman possesses her peculiar attributes with but slight modifications in the absence of her ovaries.

It is, he says, a well-ascertained fact that women who have no ovaries possess the sexual desire like other women, and altogether behave as women in their sexual relations. The instinct is not dependent either upon the ovaries or on the change of puberty, although doubtless intensified by it. The full development of women may be attained without menstruation, and even without uterus or ovaries. He seems inclined to think that some at least of the hemorrhages which occur in girls are due to the general excitement which it is now known marks the time of menstruation, and which is general and not merely local, and which apparently is formed before puberty; and it is seen to linger after the change of life has been completed. He thinks that the supposition is not too wild to be entertained that we may find traces of periodical hemorrhage in certain adult males, which are allied to the rhythmic flow of woman. In women the menstrual fluxes seem to furnish a sort of safeguard against certain ailments: thus, gout rarely shows itself very actively in woman until after the menopause; and in advanced life women are nearly as subject to gout as men of the same age.

In an interesting communication to the *Journal of Anatomy and Physiology*, Professor Sidney Ringer furnishes reasons for holding that tetanus is not due to increased excitability of the spinal cord, but rather to a diminished resistance offered to the spread of reflex action. He was led to this conclusion by a series of experiments made with calabar bean, the common box (buxus), and gelseminum. The two last-named drugs paralyze the cord and yet produce tetanus: while if strychnine is administered to an animal in whom one leg is made artificially weaker than the other, tetanus is more readily and sooner produced in the weaker limb. Thus he holds a view the opposite of that taught in our ordinary handbooks, and if the facts he adduces are beyond disproof we seem compelled to accept his conclusions. Not only is this view maintained by experimentation, but it is supported by clinical evidence. He says, "A similar fact is often witnessed in disease, when paralyzed limbs sooner become tetanized by strychnia than other parts of the body, as is the case of hemiplegia from brain-disease. Here half the cord is not exercised at all, or but slightly, and consequently its nutrition becomes defective, and it wastes. Strychnia will induce tetanus more readily in this depressed half of the cord than in the opposite healthy half." In tetanus, then, "the resistance to radiation is diminished," in the words of Ferrier. Bernstein says, "Physiological facts point to the conclusion that there is a connection of the sensory centres with each other, for a phenomenon which forcibly points to such a connection is that of irradiation. It is known that if a sensation is increased so as to become pain, it will not confine itself to the spot which has been irritated; the whole hand, nay, the whole arm, may ache if the cause of pain is only in the finger. It even happens that in such a case we feel the same sensation of pain in the corresponding finger of the other hand, though in a less degree. But, it will be asked, why do only strong impressions cause irradiation, and why not also weak ones? And then why does not irradiation extend over the whole sensory centre, whereas it occupies only part of it? We are hereby led to the assumption that the excitation has to overcome resistance in the ganglionic cells, and on account thereof undergoes a loss in its intensity." Speaking of strychnia-teta-

nus he says, "It is simply due to a depression of the resistance in the nervous centres."

In my last letter I finished with some remarks about treating the individual as well as the disease. A most forcible instance of this occurred to a friend lately, one of the longest-headed of the many long-headed Aberdeenians in London. He was called in to see a boy who was suffering from double tubercular pleurisy and worn to a skeleton. The diagnosis had already been made by several of the most eminent men in London, who had given the youth hypophosphites and other remedies for the tubercular condition of the lungs. The patient got steadily worse, and appeared to be at death's door. When my friend saw him he was in bed, laden with bedclothes, and with a temperature above 103° Fahr. His tongue was red, raw, and irritable. Two things were evident: 1st, that the organism was rapidly burning itself up, and, 2d, that the condition of the stomach called for immediate treatment. The first thing done was to throw off the bulk of the bedclothes, so as to admit of more perfect heat-loss. Without any antipyretic, the temperature soon fell considerably, and in a little time became nearly normal. Then bismuth in tragacanth mixture was given to allay the gastric irritability, and a milk diet was prescribed. The stomach soon became soothed, the milk was retained, nutrition improved, the boy gathered flesh, and the whole general condition was changed. The lungs and pleura were for the time put in abeyance, and all that was done for them was to keep up counter-irritation by the application of iodine liniment to one side. The improvement in the general nutrition was felt in the diseased parts, though the pleuritic rub still remained distinct; and so the patient has progressed steadily to convalescence by treating the individual rather than the disease.

Another contribution to our knowledge of the length of time human beings can survive without food has been furnished by an accident in a Welsh coal-mine. An influx of water from an old working caught nine men and imprisoned them in one of the higher levels of the pit. Believing that some of the men were alive, large pumps were fitted to the pit, but were found to be ineffectual. It was then determined to cut through forty yards of solid coal lying betwixt the imprisoned men and an accessible point. This undertaking took several days, but they had not gone far before they heard the knocking of the imprisoned men. At last the men were reached and all recovered alive. For ten days they had been immured, absolutely without food, except some grease which they licked off their candle-box. They had some muddy water, which at first they could not taste, but in time they were glad to drink occasionally. When recovered, they were in a much less exhausted condition than was anticipated, and some even were able to walk away themselves into the new cutting made for their escape. Four men were lost somewhere else, but the five who were found were all of them comparatively strong. They were just coming out when the water caught them: so it may be inferred they were all with empty stomachs to commence with.

The circumstances which have kept them so vigorous after this long fast are probably these. The men, as a rule, made almost no exertion, which would have tended to produce earlier exhaustion. They were in a pit which is, as is well known, of a high temperature: so that their body-heat was easily maintained. They were up to the last few hours dry, and not in water, which would rapidly have drained away their body-heat. Coal is a very bad conductor of heat: so they were not unfavorably surrounded. They were in total darkness most of the time after their candles went out, and that might reduce their chemical combustion somewhat. The compressed air in which they were might have been supposed to have increased their chemical interchanges, but probably that air was soon re-breathed, so that its oxidizing power was diminished. Probably if the air had not been highly compressed they might have perished of cold from imperfect oxidation. So far as is yet known, this long immersion in compressed air has had no injurious effects upon the lungs.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, FEBRUARY 8, 1877.

The PRESIDENT, DR. H. LENOX HODGE, in the chair.

Case of mitral, tricuspid, and aortic disease, with pulsation of the liver, and pericardial adhesions. By Dr. JOHN GUITÉRAS.

W. McG., æt. 27, intemperate and a sailor; mother died of consumption, the rest of the family very healthy.

He had always been in good health, with the exception of an attack of acute articular rheumatism at the age of 22. It was followed by no apparent cardiac disease. Shortly after he contracted syphilis; and its secondary manifestations brought him twice to the hospital.

Three years ago he began to suffer with dizziness, dyspnœa, and palpitations. During the present year he has been twice under treatment for œdema and other cardiac symptoms. Diagnosis, mitral regurgitation. He came under my care three weeks ago, when the nurse called my attention to the abdominal pulsation, a symptom that had escaped the patient's observation.

Present condition.—There is emaciation and

slight jaundice. The skin is marked by scars of rupia. The face and extremities are congested, the veins of the neck swollen and the seat of pulsation. The ophthalmoscope reveals pulsation of the retinal veins. The whole trunk is rhythmically shaken and the abdomen distended with each impulse. There are two areas of circumscribed pulsation: one is at the præcordia from the third to the sixth rib, the apex of the heart being opposite the fifth interspace just within the line of the nipple; the other area of pulsation is at the epigastrium. The impulses are not synchronous. The respiration is interrupted by the jerking movement transmitted to the diaphragm.

The epigastric impulse is as marked as I ever saw it in any case of aneurism. The whole abdomen pulsates; but the circumscribed area at the epigastrium feels like an expansile tumor extending from under the ribs down to two finger-breadths from the umbilicus. It seems to spring from the right hypochondrium, though the tympanitic distention of the abdomen prevents the distinct definition of a border towards the left hypochondrium. The results of percussion are also interfered with by the same cause. There is pulsation of the lower right half of the thorax, and by pressing the hand under the ribs the edge of the liver can be felt pulsating even to the lumbar region. The pulsation is somewhat increased by the erect posture, and not diminished by the prone. There is no pulsation along the lumbar vertebræ, and no thrill anywhere.

Auscultation of the heart reveals a loud blowing murmur, replacing the first sound, and transmitted towards the apex and the right of lower segment of the sternum. It is also heard towards the axillary line and at the angle of the scapula. No murmur is heard over the tumor, or along the lumbar vertebræ. There is reduplication of the second sound of the heart. The asynchronous pulsations are found to correspond—that at the præcordia with the presystolic time, and the epigastric with the murmurs or systole of the ventricle as indicated by the carotid pulse; at this time an *active* retraction about the region of the apex is to be noted. I could detect no sound of the jugular valves.

The patient complains of weakness in the loins, a painful sensation of weight about the epigastrium, and marked dyspeptic symptoms.

The diagnosis of mitral and tricuspid regurgitation, with adherent pericardium and pulsation of the liver, is confirmed by the specimens described in the following notes of the post-mortem examination.

There is decided jaundice.

Lungs œdematous; no adhesions; considerable passive effusion on the right side.

Heart: the pericardium is closely adherent to the entire surface of the heart, but not abnormally so to the chest-walls and pleura. The left ventricle is somewhat dilated, and its walls of normal thickness. There is some thickening of the auricular walls. The cusps of the mitral valve are thickened, rigid, adherent, so as to form a typical button-hole mitral orifice, with rigid, unyielding edges. The walls of the right ventricle are slightly hypertrophied. The right auricle is dilated, and its walls thin. The cusps of the tricuspid valve are thickened and shortened. There is thickening of the aortic valves, evidently sufficient to produce obstruction. The muscle is flabby and fatty. Weight, seventeen ounces.

The *liver* is indurated, engorged, and fatty, and the veins resemble sinuses. The capsule is thickened, rough, and opaque. The capsule of the spleen is in the same condition, the organ weighing thirteen and a half ounces; the liver, three pounds twelve ounces.

The *gall-bladder* is remarkably thickened.

Kidneys indurated, somewhat enlarged, and such as are characteristic of cardiac disease. They are somewhat fatty, and probably the seat of interstitial proliferation.

Remarks.—When under my care at the Philadelphia Hospital, the patient had been very much relieved by the use of sulphate of iron, digitalis, and ergotin. The pulsation diminished, but was persistent to the time of his death, which was the result of progressive failure of the heart's action.

The case very much resembled one of aneurism. The persistency of the pulsation for nearly three months very decidedly pointed in this direction, as well as the vigor of the impulse, and the absence of any evidence from percussion that there was enlargement of the right lobe of the liver. Yet the general venous pulse, the pulsation along the margin of the right thorax, the jaundice, the tendency of the simulating tumor to start from the right of the median line, and the absence of other signs of aneurism and of atheroma, pointed to a pulsating liver. I have seen cases where the venous pulse was more marked than in this case, but none where the hepatic pulsation was so great. This finds an explanation in the pericardial adhesions.

The diagnosis of the latter was rendered probable by the reduplication of the second sound. A better support for the theory to explain this phenomenon in such cases could not be found. The reduplication could be heard only towards the lower segment of the heart, and to my ear it seemed clearly produced by the recoil of the chest-walls after their depression in unison with the contracting ventricle.

The systolic pitting of the region of the apex-beat also proved the existence of pericardial adhesion. The presence of this symptom in the present case proves, contrary to Skoda's opinion, that the existence of adhesions between the pericardium and the chest-walls is not necessary for its production.

The jerking movements that this adherent heart must have transmitted to the diaphragm

must have had much to do with the production of the interrupted respiration. I also believe that they contributed to increase the abdominal pulsation.

It is worthy of note, first, that this condition alone, without the tricuspid regurgitation, could have been sufficient to cause the general venous pulse, inasmuch as the inspiratory force, an important aid to the venous circulation, was rhythmically interrupted by the heart's action; second, that an abdominal aneurism beating against the diaphragm could give rise to the same symptoms.

The absence of a presystolic and aortic obstructive murmur, notwithstanding the lesions, may be explained in the usual manner.

Dr. LONGSTRETH asked Dr. Guitéras whether the liver extended below the ribs.

Dr. GUITÉRAS said it did not in the mammary line, but that in the median line it extended to within an inch of the umbilicus.

Dr. LONGSTRETH asked the condition of the right side of the heart as to the presence of blood.

Dr. GUITÉRAS did not know.

Dr. LONGSTRETH thought it peculiar that the liver should extend so far forward and downward as to produce so remarkable a pulsation. The pulsation is generally downward, but the organ is always extended beyond the edge of the ribs, and not to the left in this instance.

Dr. GUITÉRAS said the indurative changes referred to, which were so marked in the kidney and spleen, had also commenced in the liver; that it was a little hardened, which might account for the absence of enlargement. He thought the left lobe pulsated more because it was not so much covered in by resisting chest-walls and diaphragm; and he also called attention again to the transmitted cardiac impulse through the diaphragm and adherent pericardium, which would especially influence the left lobe of the liver.

Dr. C. B. NANCREDE asked whether it was customary to find pulsation of the retinal veins in heart cases.

Dr. GUITÉRAS said he had only looked for it in one other heart case besides this, and this was in a case of simple tricuspid regurgitation, and he could see no way in which other than tricuspid lesions could give rise to such a symptom.

Dr. NANCREDE said he asked because he thought he had observed pulsation of the retinal veins where there was no heart trouble. He wanted to know whether the pulsation involved the whole organ (the liver).

Dr. GUITÉRAS said that there were other causes, not connected with the heart, giving rise to pulsation of the vessels of the fundus. In regard to the liver, the notes stated that the pulse was more marked in the left lobe, but that it could be felt by pressing the fingers under the right margin of the thorax.

Dr. NANCREDE thought that these cases of venous pulsation in the eye were explainable by the withdrawal of the inhibitory influence of the sympathetic nervous system, as all the cases he had seen were unaccompanied by any heart trouble. With regard to this present case, he thought it conceivable that as in the cerebro-spinal system we have an inhibitory reflex influence set up by irritation of the afferent nerves, he did not see why the same thing could not obtain in the sympathetic system. In the present specimen the two cardiac nerves must have been compressed by the plastic lymph which bound down the pericardium to the heart.

Might this not have set up an inhibitory influence which, removing the nervous influence of the sympathetic from the vessels of the liver, would cause a pulsation and the *pseudo-cavernous* condition of that organ? We have this passage of arterial blood into the veins actually demonstrated for us by observed cases where it has issued from a vein after prolonged bleeding. As is well known, the sympathetic nervous system gives out before the cerebro-spinal: consequently the capillaries dilate and pass the blood too rapidly to allow of its becoming venous. In further illustration of this point Dr. Nancrede mentioned a case which he had presented to the Society some years ago, where profuse diuresis was caused by the pressure of an aneurism upon the cœliac sympathetic plexus of nerves, which was clearly due to the dilated condition of the capillaries of the kidney rendered possible by removal of the inhibitory influence of the sympathetic.

Dr. F. P. HENRY said the principal nerve concerned in such a reflex action was that of Cyon, a sensitive cardiac nerve, irritation of which, produced artificially by experiment or through labored action of the heart, is reflected to the abdominal blood-vessels, which it paralyzes and so relieves the overstrained organ. We can therefore attribute a certain amount of congestion, and possibly pulsation, to nervous influence. Dr. H. had often seen retinal pulsation where there was no heart disease, although he thought that in this case it was produced by heart disease. It is, however, of no great diagnostic value, as it is a frequent accompaniment of trifacial neuralgia and hyperæsthesia of the retina due to overstrain of the eye, especially in connection with some anomaly of refraction.

Dr. GUITÉRAS said that there was no necessity for bringing up this nervous theory. The mechanism of the general venous pulse was a well-known and very simple one: each contraction of the right ventricle sends a wave back over the insufficient tricuspid valve into the venous system. This may even give rise to a sound in the jugular valves, but as soon as their resistance is overcome the general venous pulse becomes apparent. As there are no valves in the hepatic veins, the liver is the first to suffer. In regard to nervous disturb-

ance I may say that there was a peculiar absence in this case. The pulse was regular, and there was no cardiac pain. I am aware that some nervous symptoms have been explained in cases of pericarditis by irritation of the phrenic nerves, such as hiccough, angina, palpitations; but they were all absent in this case.

Dr. HENRY said the nerve he referred to was a branch of the pneumogastric, and he thought it no stretch of theory to call in its action to explain pulsation of an abdominal organ: indeed, if such pulsation were merely mechanical we should expect to find it constantly.

Dr. LONGSTRETH asked whether the second sound at the aortic orifice could not be caused by a condition of the aortic valves. He thought Dr. Guitéras seemed to indicate that the reduplication of the second sound was pericardial as to its origin. Was not the condition of the aortic valve such as to allow regurgitations? He thought the aortic valves seemed shortened.

Dr. GUITÉRAS said it was not a murmur, but a reduplicated second sound, and it is a result of a recoil of the chest-walls returning to their place after being dragged down by the contracting ventricle, which they follow on account of the adherent pericardium. The aortic valves seemed to close very well, but there was an aortic *obstructive* thickening which did not give rise to any murmur.

Epithelioma of cervix uteri and vagina. By Dr. J. EWING MEARS.

The patient from whom the specimen was removed was seen by Dr. Mears in consultation with her family physician, Dr. Alfred Jones, of this city, January 30, 1876. The following history was obtained at that time. Mrs. O., widow, aged 36, states that her mother died at fifty-two years of age, of inanition, the result of a disease of the tongue which was pronounced by an eminent surgeon of this city to be malignant in character. Her father died of dropsy at the same age, the condition being caused, as stated, by structural disease of the liver. One member of the family, a sister, died of phthisis. Previous to her marriage, fifteen years ago, her own health was fairly good; since then it has not been good. Her first labor was premature, and gave rise to prolapse of the womb, for the relief of which she wore a pessary. Four years since, she had frequent attacks of pulmonary hemorrhage, and was informed by the physician attending her at that time that she had phthisis, one lung being, as he stated, "all gone." Under the treatment of another physician, whom she consulted, the hæmoptysis ceased, and did not return until last year, when it was again relieved by her attending physician.

In the month of June, 1876, two weeks after the disappearance of her menses, she had a copious uterine hemorrhage, which continued for a number of days. Believing it to be the beginning of the menopausis, she did not seek medical advice. During this time the death of her husband occurred, and she was subjected to great care and anxiety. In the next month, after a shorter interval following the usual menstrual flow, the hemorrhage recurred, and continued for a longer period. She now consulted her physician, who prescribed an astringent wash and placed her upon strong tonic treatment. A vaginal examination was not made. Each succeeding month the hemorrhage occurred, increasing in quantity and following quite closely upon the cessation of the menstrual flux. She has observed that the attacks were preceded and followed by a copious serous discharge; sometimes this was mixed with blood. She states that at no time has the discharge been offensive. She has suffered from severe pains in the lumbar and inguinal regions, which have interfered seriously with her work and rest.

By the advice of her physician, she submitted to a vaginal examination, when the morbid condition implicating the uterus was detected. On making digital examination, the growth was found to involve the entire external surface of the cervix uteri and to extend a short distance into the canal. On the left a distinct neck could be felt between the diseased tissue and the utero-vaginal fold, while on the right the disease had involved the vaginal wall, thus obliterating all traces of the cervix. Manipulation provoked slight hemorrhage and pain.

Four days later the growth was removed, the galvano-cautery wire being employed for this purpose. This was only partially successful, owing to the melting of the platinum wire. The operation was completed with the scissors, and the hemorrhage controlled by the galvano-cautery, which acted admirably. The surfaces were freely touched by the cautery, thus removing all of the morbid tissue. The patient is doing well, no examination having thus far been made to determine the condition of the parts. No bleeding has occurred, and but slight suppuration is present.

The specimen was referred to the Committee on Morbid Growths.

Report of the Committee on Morbid Growths.

"The specimen presented by Dr. Mears, removed from the vagina and os uteri, shows by microscopic examination the characteristic structure of an epithelioma, having long prolongations of epithelial pegs into the submucous tissue, in which were seen a few epithelial pearls. The papillæ of the mucous membrane were exceedingly large, measuring in length from $\frac{1}{80}$ to $\frac{1}{60}$ of an inch, and from $\frac{1}{600}$ to $\frac{1}{300}$ of an inch in width.

"March 8, 1877."

Dr. MEARS also presented the bladder taken from the subject used for class demonstration at the Dental College, showing a fasciculated condition due to obstruction by enlarged prostate.

Freezing microtome. By Dr. Morris Longstreth.

The freezing microtome exhibited is that described on p. 164 of Prof. Wm. Rutherford's second edition of his "Outlines of Practical Histology."

Dr. James Tyson asked Dr. Longstreth whether he had found sections made from tissues hardened by freezing exhibit appearances more satisfactory, particularly as regards the relations of adjacent structures to each other, than those made from sections hardened by alcohol and chromic acid and its compounds.

Dr. Longstreth said he favored the results obtained from frozen tissues, all parts of the section showing well. He said that it had been formerly offered as an objection to the freezing-process for cutting microscopic sections, that the cells were ruptured by the change of density and damaged in appearances. This effect he had found not to be the case. It is claimed by Prof. Rutherford that the proper relations of the component parts of a section of tissue are better preserved than by the other methods of preparing tissues for section-cutting. If one calls to mind the long and delicate process usually employed in the treatment of sections after hardening in chromic acid or Müller's fluid,—the many transfers from one reagent to another, with the successive washings,—it is easy to comprehend that this freezing-method is almost free from the danger of disturbing the relations of the parts of the section. The application of reagents, etc., can be performed on the glass slide on which the section has been placed whilst yet frozen.

The embedding mixture in which the specimen is frozen, recommended by Prof. Rutherford, has been found entirely suitable and serves completely the purpose. It is composed of 5 oz. gum acacia, 120 m. spts. camphor, and 10 oz. water. (Br. Ph.)

Dr. Jos. G. Richardson preferred the results from cutting of frozen tissues not only as regards cellular elements, but also of denser structures. He thought the granular and brittle conditions which result from hardening in chromic acid often objectionable. He had employed the method recommended by Klein several years ago, in which the specimen was pinned to a cork enclosed in a tin box and the latter immersed in a freezing-mixture, and was much impressed with the superiority of the sections thus obtained, especially as respects the cellular structures.

The method certainly facilitates the making of thin sections in cases where an immediate examination is necessary, as is sometimes the case.

Dr. Longstreth further remarked that, in addition to the advantages derived from the use of the freezing-microtome already mentioned, in studying sections as a whole and discovering the relations of stroma, cells, etc., the instrument allowed of a rapid method of examining the fibrous portions alone. Other methods of hardening do not act on the different constituents of a tissue alike: one hardening solution, whilst applicable to the preservation of cells and their subsequent study, is not favorable for the fibres; again, with other hardening methods it is oftentimes difficult to remove the cell-elements by pencilling without working damage to the fibrous portions, the hardening process causing the cells to adhere with great firmness. The freezing-method obviates such difficulties. A difficulty might arise, however, in the treatment of a frozen section, from the great delicacy of the stroma of a tissue when submitted to the pencilling process. This difficulty he had overcome by immersing the section in alcohol for a short time, until sufficiently hardened to bear the pencilling without damage. Other appropriate fluids could be substituted for alcohol if desirable.

REVIEWS AND BOOK NOTICES.

Electro-Thermal Bath. By Justin Hayes, M.D. Chicago, Jansen, McClurg & Co., 1877.

This little book is mostly occupied with the details of cases cured or benefited by the electric bath. It is altogether devoid of any scientific study of this method of treatment, but is certainly much more worthy of praise than the work of Schweig recently noticed, in that fewer apparent impossibilities have been seen by its author, and an intelligible statement of the method of giving the bath is given. Any one desiring to know what is claimed for the bath, and how to give the bath, may buy this book with a reasonable hope of at least a modicum of satisfaction. As a specimen of style, we extract the subjoined sentence. We have not seen its equal since the days of Macaulay, and hope that our readers will enjoy it as much and study it as profoundly as we have done. It occurs at the end of a long report of the case of Miss ——, a female physician, in whom male physicians mistook an ascites from chronic peritonitis for ovarian tumor, and performed ovariotomy in spite of the remonstrances of certain other male doctors:

"A few hours before her death the enormity of the mistake came to her mind with a wonderful force, and the whole arena of the pros and cons of lucidity and morbidity of mind, that had yielded their various impress on her conduct during this fearful sickness, flashed upon her as she was at the zenith of her comprehension of the whole situation."

Atlas of Skin Diseases. By Louis A. Duhring, M.D. Philadelphia, J. B. Lippincott & Co.

The second fasciculus of this work has ap-

peared, and more than fulfils the promise of the first. The profession can well forgive the delay, as it was caused by the author's pre-occupation on his text-book, and will not occur again. The plates represent Acne rosacea, Ichthyosis, Tinea versicolor, Sycosis non-parasitica, and are extremely fine.

ZIEMSSEN'S CYCLOPÆDIA OF THE PRACTICE OF MEDICINE.—Vol. XII. DISEASES OF THE BRAIN AND ITS MEMBRANES.

This volume of the Cyclopædia fully comes up to the standard of preceding volumes. We have been especially pleased by the articles by Professor Nothnagel, whilst those by Huguenin seem, although very full, discursive and lacking in system. Whether Dr. Buck is getting tired of his editorial labors or not we have no information; he would, however, be something more than human were he not doing so, and we do not feel like blaming him for the vexation we have suffered from consultation of his index. Some three hundred pages—it would be more satisfactory if they were fewer—are occupied with a discussion of meningitis in its various forms and parts, and yet meningitis does not appear in the index, and we can find there no reference to any variety of it except the tuberculous,—which, when a man is getting up a clinical lecture in ten minutes, is calculated to lead to low views as to the blessedness of life, and to a rash acceptance of the Calvinistic belief in the total depravity of the human race.

GLEANINGS FROM EXCHANGES.

PECULIAR WOUND BY A KNIFE (*The British Medical Journal*, March 17, 1877).—Mr. Charles E. Hoar reports a case in which a wound of the left side of the neck was inflicted by a double-edged knife thrown with homicidal intent. Death occurred in thirty minutes. Twenty-one hours after death an autopsy was made, with the following results. There was slight rigor mortis. The body was well nourished and of healthy appearance. There was a punctured oblique wound, three-quarters of an inch in length, in the skin on the left side of the front of the neck, anterior to the sterno-mastoid muscle, three inches (in an extended position) above the sternal end of the clavicle. On removing the skin, the left anterior jugular vein was found to be perforated vertically, and empty of blood; the left sterno-hyoid muscle was cut through diagonally. There was extravasation of blood in and around this muscle. The left sterno-thyroid muscle was cut through; the first and second cartilages of the trachea on the left side of the front were obliquely cut through, and the lower part of the second cartilage was also perforated towards the back on the right side. Some small deep veins at the base of the neck on the right side were wounded; and there was considerable extravasation of blood directly connected with the posterior aperture in the trachea. The wound penetrated between the bodies of the vertebræ and the inner side of the anterior part of the first rib (nearly wounding the right pleura) to a distance of five inches (in an extended position) from the skin. The thyroid gland was large, but uninjured. The carotid artery and internal jugular vein of each side were also uninjured. The bronchi were full of dark blood. On opening the chest, the lungs did not collapse: they were pale in front, but distended with frothy blood and air. The large veins of the chest and right cavities of the heart were full of dark fluid blood. The left cavities of the heart were empty, and ventricle firmly contracted. The stomach contained dark matter.

The case is interesting in many points. The cause of death was undoubtedly suffocation, in consequence of the blood flowing into the trachea, principally through the posterior aperture, and filling the bronchial tubes. Whether syncope from loss of blood accelerated the decease or not, it is hardly necessary to inquire, as the suffocation must have soon occurred. It is said that he spoke a few words after he went up-stairs. The very small external wound, the depth which the knife penetrated, the transfixion of the trachea, and the immunity from injury of the carotid arteries and internal jugular veins, were peculiar features of this case.

TUBERCULOSIS OF THE VAGINA (*The Clinic*, March 31, 1877).—Tuberculosis of the vagina is one of the rarest diseases, but Weigert reports the case of a woman, aged 27, in whom he found small tubercular deposits in the lungs and intestines, together with a general tubercular peritonitis. A number of small spots with dark-red bases and thickly studded with miliary granules were discovered in the mucous membrane of the upper portion of the vagina. Portions of these spots of altered mucous membrane had undergone caseous degeneration. The uterine mucous membrane was intact. The microscope clearly determined the tuberculous nature of these spots, which in some of the larger infiltrated portions had blended together, while in other spots remaining separate. He did not consider it probable that any connection existed between the peritoneal and the vaginal tuberculosis.

ERGOT IN ATONY OF THE BLADDER (*The Clinic*, March 31, 1877).—Prof. von Langenbeck, at a meeting of the Berlin Medical Society, stated that in atony of the bladder, associated with enlarged prostate, in elderly men, in which the organ is never completely emptied of urine, he has lately tried the hypodermic injection of ergotin with most surprising results. In three cases the contractile power of the bladder was at once

increased so as to enable the patient to discharge additional urine, and in a few days it had so augmented that very little urine was left behind. After one or two injections the improvement was considerable, and even a diminution in the size of the prostate seemed to have ensued. Dr. Israel said that he had derived the same benefit from the employment of the ergotin, and referred to the case of a patient who was thus enabled to hold his water for three hours, whereas before he voided it every ten minutes.

RAREFIED AIR IN THE TREATMENT OF PULMONARY DISEASE (*The Clinic*, March 31, 1877).—Dr. Frentler claims rather remarkable results from the treatment of various forms of pulmonary diseases by the inhalation of rarefied air. About thirty cases (of hæmoptysis, various pneumonic infiltrations, chronic and general catarrhs, tuberculosis, and phthisis) were treated by these inhalations, and the following results observed: Within a week the patients rested better at night, regained appetite, showed a marked increase of strength, and a diminution of night-sweats and diarrhœa. Later (except in the few not at all benefited), the temperature came down, and the rate of pulse and respiration was diminished; cough and expectoration varied, and seemed dependent upon the state of the atmosphere. In slight cases, the local improvement was very soon quite manifest. Cures occurred earliest in cases of hæmoptysis, then in general chronic catarrh, then in general tuberculosis (?), the time being respectively about three, four, and five weeks! Disease at the apices, and pneumonic infiltrations of the lower lobes, required six to eight weeks. In cases of large cavities, the results seemed to be only temporary.

CEREBRO-SPINAL MENINGITIS THE RESULT OF AN ABSCESS OPENING INTO THE SPINAL CANAL (*The New York Medical Journal*, February, 1877).—An excessively rare and interesting case of cerebro-spinal meningitis occurred recently in the Presbyterian Hospital, and resulted from the penetration of the spinal canal by an abscess situate in the lumbar region. The history of the case was as follows. A man entered the hospital, suffering from an abscess situated near the right sacro-il ac synchondrosis. There were no special symptoms complained of, other than lassitude and weariness. The abscess had been noticed for about two years, and had been opened at different times. A few days after being admitted to the wards, the abscess was laid open, and shortly afterwards symptoms of spinal and cerebral meningitis developed themselves. The cerebral meningitis followed so closely on the spinal that it might be said to be nearly coincident. Death took place forty-eight hours after the seizure. At the autopsy a deposit of lymph and pus was found over the convexity of the anterior lobes of the brain. The anterior and posterior surfaces of the spinal cord were found deeply congested, and covered also with the same products of inflammation.

On examining the abscess it was found to be situated in the vicinity of the third and fourth sacral vertebræ. On each side of the sacral vertebræ was found a large cancerous mass, which evidently had been the cause of the abscess. The most interesting element of the autopsy was found to exist in the last lumbar vertebra. In the middle of the body of that vertebra there was found an opening which communicated between the abscess and the spinal canal. This opening was sufficiently large to admit a No. 10 catheter, and allowed of the free passage of the contents of the abscess into the spinal canal. A point of interest was that the accident took place after the abscess had been freely opened.

LOCAL TREATMENT IN DIPHTHERIA (*The Chicago Medical Journal and Examiner*, March, 1877).—Dr. A. W. Hagenbuch, in reporting the features of an epidemic of diphtheria which occurred in a pauper institution under his charge, ascribes the very low rate of mortality (one in thirty-three) to the early and thorough local treatment employed. Twenty cases in which a vigorous local treatment was employed made a more rapid and perfect recovery than cases in which the local treatment consisted only of weak astringent gargles too early discontinued. In several cases it was necessary to return to the local applications to relieve suffering and imminent danger to life from accumulated secretions and extensive false membranes obstructing the pharyngeal space. The local applications mostly employed consisted of equal parts of tincture of the chloride of iron and dilute nitric acid. First rinsing the mouth, and carefully removing the secretions and detached membranes with a dry swab, this preparation was applied with a soft brush. The parts, upon inspection, now presented a dryer and more healthy appearance, the astringent application causing the contraction of the tissues and giving to the enlarged tonsils a corrugated appearance. In three cases only was a stronger preparation than the above employed, including one case, in which the nitric acid C. P. was carefully applied to the false membrane with an ivory probe; and although the membrane reappeared in other locations, a single slight application would completely remove the newly-formed membrane, leaving in its place a healthy-appearing granulated surface, which healed kindly without any further trouble.

ABSENCE OF UTERUS AND VAGINA (*Medical Examiner*, January 4, 1877).—Dr. Puntores describes the case of a single woman, æt. 34, who, wishing to be married, consulted him with the object of undergoing an operation for the manufacture of a vagina. She said she had sexual desire and experienced an orgasm on vulvar copulation.

There were a well-developed clitoris, labia majora and minora. On examination with sound in the bladder and finger in the rectum he became aware of the absence of the uterus, and consequently declined to operate. The mammæ were well developed.

EXHALATION OF CARBONIC ANHYDRIDE BY THE SKIN IN MAN (*The Lancet*, March 24, 1877).—Dr. Fubini, in the number just issued of the *Archives of Medical Science* of Turin, gives the results of a series of investigations he has made in conjunction with Dr. Ronchi, in the physiological laboratory of Turin. These observers have applied an apparatus which is fitted with means of determining the temperature and the amount of watery vapor and of carbonic acid gas eliminated by the skin. They find that the elimination of the gas is closely connected with the circulation of the blood, and all causes that are capable of acting on this influence the elimination of carbonic anhydride. Their experiments do not enable them to draw any conclusions in regard to the influence of barometric pressure on the elimination of this gas, perhaps because the limits between which the pressure varied were too small. They ascertained the important fact that the quantity of the carbonic anhydride exhaled by the forearm and hand in the dark is to that exhaled under the excitation of bright light as 100 to 113. They found also that temperature exerts a certain influence on the amount eliminated from the surface of the skin generally, the quantity being increased proportionately to the rise of temperature; that the amount eliminated during fasting, as compared with that during digestion, was as 100 to 112; and, lastly, that during the consumption of animal diet the surface of the body exhales a less amount of carbonic anhydride, as compared with purely vegetable diet, in the proportion of 100 to 116. All the experiments were made on Dr. Ronchi, who was twenty-seven years of age and weighed 105 pounds. The surface of the forearm and hand in him was to the surface of the whole body as 1 to 16.

EFFUSIONS OF THE PLEURA, AND THORACENTESIS (*The Medical Record*, February 3, 1877).—Dr. Beverly Robinson, in an admirable and exhaustive paper on the conditions existing in effusions of the pleura, comes to the following conclusions:

Inasmuch as it is proved that puncture of the chest-walls, with a capillary needle attached to the improved aspirator, whenever performed with due precautions against the entrance of air into the pleura, is a perfectly simple and harmless operation, and, further, that any appreciable amount of liquid, irrespective of its nature, is by its presence pernicious, and may become dangerous; therefore I hold that, *in all cases of pleuritis in which fluid is present, we should without hesitation make use of the aspirator to withdraw the morbid effusion.*

To this law I shall only affix *one* limitation and *one* exception.

The limitation is, Whenever very large or excessive quantities of fluid are present, it is wiser to puncture the chest on two successive occasions, so that all risk of acute œdema of the lung on the affected side shall be avoided.

The exception is, If the patient be very much enfeebled and the effusion be small or moderate, we may with advantage delay the operation, during a brief period, until his forces have been somewhat re-established.

By proceeding after this manner, all danger of *fatal syncope* will be obviated. Meanwhile, of course, if the effusion from small, or moderate, rapidly becomes large or excessive, the formal and imperative indication is to operate so soon as possible. In syncopal states there is anæmia of the brain, which is often successfully treated by placing the patient flat on his back. In view of this fact, Marrotte has recommended to operate while the patient is in a half-reclining or completely recumbent posture, so that there may be less predisposition to this condition. This practice seems to me judicious.

DIALYSED IRON (*The Medical Press and Circular*, March 21, 1877).—A preparation of iron has been recently introduced. It consists of the peroxide of iron in the colloid form held in solution in a small body of water: it is, in fact, a *soluble hydrate of iron*. It contains no trace of acid, the equivalent of acid being replaced by the equivalent of water by diffusion (dialysis). This preparation is the nearest approach to the form of iron contained in the blood, and as it has no irritant properties it will doubtless prove to be the most valuable of all the forms in which iron can be administered. We have already given the preparation an extensive trial. Although a strong solution, it has scarcely any taste and is taken readily by children. It does not constipate nor disturb the digestion, whilst at the same time it produces all the good effects we are accustomed to recognize from iron in the other forms in which we have been accustomed to administer it.

The *solution* may be given in doses similar to the muriated tincture, that is, ten to fifteen drops, or for children about five drops. It may be given before meals, as it does not irritate the stomach.

It cannot be mixed with ordinary hard water, which causes it to flake or gelatinize, but it may be taken in distilled water or dropped on a piece of sugar. Not the least advantage of the dialysed iron is that it can be brought into contact with the teeth with impunity. It may be given with equal effect in the form of a *pill*, each pill being equal to ten drops of the solution, or as a *lozenge*, equal to two drops of the solution.

THE TREATMENT OF LEG-ULCERS (*The New York Medical Journal*, April, 1877).—Prof. Von Mosetig reports as follows on this sub-

ject. The treatment of ulcers of the foot (of which seventy-four cases occurred) was as follows: Varicose ulcers, when unclean, were dressed with carbolized glycerine (one to ten), until the ulcer was transformed into a clean, suppurating wound; then fomentations with tepid water were made, and occasional stimulation with lunar caustic. The patients were compelled to maintain absolute rest in bed, and when discharged were advised to wear a bandage on the whole extremity. In gangrenous ulcers, equal parts of carbolic acid and alcohol were applied, or the ulcer cauterized with Canquoin's chloride-of-zinc ointment. Ulcers with steep and indurated margins were stimulated by pressure with straps of adhesive plaster, while serpiginous ulcers were treated with red-precipitate ointment, and iodide of potassium internally. When the ulcer was situated directly over the tibia, Faure's method of lateral incisions, usually two half-elliptical incisions through the skin down to the fascia, at a distance of two to three centimetres from the margin of the ulcer, and extending beyond it, was used. The author never plugs the fresh incisions with lint, as he has observed that, if carried down to the fascia, they begin to gape themselves, while the ulcer rapidly diminishes and cicatrizes. He prefers Faure's method to that of Nussbaum's entire circumcision, as in one case of the latter gangrene of circumcised skin resulted. He has never had favorable results from skin-grafting in ulcers of the leg. Though the transplanted pieces of skin attached themselves, they were often dissolved or ulcerated even during the treatment, but invariably as soon as the patient attempted to walk.

DIGITALIS IN SCARLATINA (*The Medical Record*, February 3, 1877).—Dr. Daniel Lewis has used digitalis in thirteen consecutive cases of scarlatina.

The age of the youngest patient was ten months, of the oldest twelve years.

There was an abundant eruption in ten of the thirteen cases. Four patients had severe inflammation of the throat, with ulceration, diphtheritic exudation, and considerable glandular enlargement.

The temperature when the treatment was begun ranged from 103° to 106½°; pulse 120 to 148.

No suppuration of glands occurred in any case; the temperature was promptly reduced to 102°, or below; the pulse fell to 110–130, and there were no symptoms of nephritis, except in a single case. In that one the digitalis had been discontinued, and on the fifteenth day there was a sudden rise in temperature, convulsive movements in the muscles of the left side, and a trace of albumen in the urine.

The digitalis was resumed, and in twenty-four hours all bad symptoms subsided, and the patient made a good recovery.

Four of the patients died; one on the second day, in which eruption was hemorrhagic; two with scarlatina anginosa, on the fourteenth and seventeenth days respectively, in which no physician was called till the fifth day, the immediate cause of death being asthenia; and one after four weeks, who had acute diarrhœa.

Otitis followed in three cases, but was so slight as to require little treatment.

The infusion of digitalis was the preparation used in all these cases, in doses of ℥ss. to ℥j every four to six hours, the state of the pulse and temperature being the guides to the dose and period of administration.

THE PATHOLOGY AND TREATMENT OF CHOREA (*The Practitioner*, March, 1877).—O. Rosenbach states that he discovered the presence of several points very sensitive to faradaic but also especially to galvanic irritation, and to the pressure of the fingers, on the spinal column of a young girl, nine years of age, who suffered from a severe attack of chorea. Similar painful points, the electrical excitation of which produced the most violent reflex movements, were found in the course of the nerves supplying the affected muscles. R. believes that generally in chorea the spinal cord (and perhaps the brain) is affected, leading to neuritic processes in the nerves. The application of blisters to the different painful points, or of the anode of the galvanic current, caused them to disappear, and with their disappearance the spasms ceased.

CAUTERIZATION OF THE PHARYNGEAL MUCOUS MEMBRANE IN AMNESIA (*Ibid.*).—M. Bilot, at a recent meeting of the Academy of Science, stated that he had obtained excellent results in certain cephalic neuroses, and especially in amnesia, by cauterization of the pharynx. He attributes the effects observed to the action indirectly exerted on the superior cervical ganglion.

MISCELLANY.

REMEDIES IN VOGUE.—The following statistics illustrate the tendency which has prevailed for the last few years to make a run on certain favorite remedies. In 1855, the central pharmaceutical establishment of the Parisian hospitals furnished 282 lbs. of chloroform; in 1875 the quantity had risen to 616 lbs. The increase of chloral, from 1869 to 1875, was from 10 to 720 lbs. Bromide of potassium, 6 lbs. in 1855; 1600 lbs. in 1875. Morphine, 1 lb. 6 oz. in 1855; 20 lbs. in 1875. The progress of alcohol, considered as a therapeutical agent, is especially worthy of notice. Between 1865 and 1875 the consumption of alcohol in the hospitals increased from 1270 to 40,000 quarts. Brandy does not appear on the list until 1862, when four quarts were supplied; in 1875 the quantity had risen

to 4108 quarts. Rum followed nearly the same rate of progression during the same time, from 35 to 5682 quarts. The white and red wines, supplied in very moderate quantities, followed the same proportions as alcohol. Among the vegetable narcotics (opium, aconite, conium), opium remained stationary at 300 to 400 lbs. per annum; but aconite, a remedy of late so much employed, particularly in England, represents a figure altogether insignificant. A remarkable fact brought to light by these statistics is that in proportion as alcohol rose leeches fell. Up to the year 1839, one million of leeches were annually supplied to the Parisian hospitals; during the last twelve years the annual supply has been about fifty thousand.—*Medical Examiner.*

THE INFLUENCE OF EXCRETA IN THE PRODUCTION OF TYPHOID FEVER.—At the sitting of the Paris Academy of Sciences, February 26, M. Guérin communicated the results of a series of experiments made to test the supposed direct influence of water-closets in producing typhoid fever. He experimented upon rabbits, injecting fecal matter, urine, blood, etc., from typhoid patients, and summarizes his conclusions as follows:

1. The fecal matter contains, after issuing from the system, a toxic principle capable of causing death in a class of animals, in time varying from a few hours to a few days.

2. The same holds good for urine, blood, mesenteric liquid, and the detritus of mesenteric ganglions, and of ulcerated intestinal mucus of typhoid subjects.

3. These matters, after some months, are found to retain in large measure their original toxical principles.

4. The fecal matter of healthy subjects, or of those affected by other diseases, has not the toxical principles which appear in excrementitial products of typhoid subjects.—*The Doctor.*

A FURTHER SUPPLEMENT

To an act to provide for the admission of certain classes of the insane, into hospitals for the insane in this Commonwealth, and their discharge therefrom, approved April 20, 1869. *Approved March* 23, 1877.

SECTION 1.—*Be it enacted, etc.*, That if any physician shall falsely certify to the insanity of any person, under the provisions of the first section of the act to which this is a supplement, and it shall appear in evidence that such false certificate was the result of negligence or deficient professional skill on the part of said physician, or that the said physician signed such certificate for a pecuniary reward or for any other consideration of value whatsoever, other than the professional fee usually paid for such services, or in which such false certificate shall tend in any manner, directly or indirectly, to advantage said physician other than relates to the said professional fee, then the said physician shall be guilty of a misdemeanor, and on conviction be fined not exceeding five hundred dollars, or undergo an imprisonment not exceeding one year, or both, or either, at the discretion of the court.

ALGÆ OF THE PONTINE MARSHES.—Two Italian physiologists, MM. Lanzi and Terrigi, have been making a series of systematic microscopical examinations of the algæ growing in the Pontine marshes and the Campagna at different seasons of the year. As the marshes dry up, the algæ decompose, and give rise to the existence of large numbers of dark granules, which MM. Lanzi and Terrigi pronounce to belong to Cohn's sphærobacteria, and to be identical with the pigment-granules found in the liver, spleen, and blood of persons who have died of malarious fever. These dark bodies are not only found in the decaying algæ, but in the air around them, to the height of a foot or two above the surface of the marsh. Be this as it may, it is certain that the prevalence of malarious fevers is always connected with the drying up of the marshes and the slow decay of the algæ growing in them. A fuller account of MM. Lanzi and Terrigi's researches may be found in the *Monthly Microscopic Journal* for February.

THE TREATMENT OF ACNE WITH SAND.—Dr. Ellinger (*Wiener Med. Wochenschrift*, No. 45) strongly recommends frictions of the skin with fine sand in the treatment of comedo and acne of the face in young persons. The sand should be regular in grain, not dusty, and not containing lumps; particles half as large or as large as a poppy-seed should alone be used. Before the friction the skin must be thoroughly washed with soap and water. It is then to be kept damp for half an hour, and finally the affected parts are to be rubbed for a short time with the sand, which is to be used slightly wet. Afterwards any adhering sand must be sponged or brushed away.

SIMPLE METHOD OF TESTING THE PURITY OF CHLOROFORM.—Dr. Luecke, of Strasburg, gives the following simple method of testing the purity of chloroform. Immerse a small piece of thin white blotting-paper into the chloroform, and then let it dry in the air. As soon as all the chloroform has evaporated, the paper will not present the least smell if the chloroform is pure. If there is any acid smell perceptible, it indicates the presence of butyric acid in the chloroform, and as a rule has the strong characteristic of that substance.

LOTIONS FOR URTICARIA.—Prof. Hardy recommends (*Union Méd.*, May 20) the following lotion, to be applied several times a day in order to allay the itching in urticaria: chloroform ten, and oil of sweet almonds thirty parts. In obstinate cases he prescribes corrosive sublimate, one-tenth to one-seventh of a part; alcohol, ten parts; and distilled water, ninety parts. He gives also internally alkaline medicines, and if these do not prove efficacious he resorts to arsenic.—*Med. Times and Gaz.*

NIGROSINE INK.—A correspondent of the *Druggists' Circular* sends a formula for a black ink which is not spoiled by being frozen, having no corrosive effect on steel pens, flowing freely, little liable to clog, and, when dry, not affected by water. It is composed of nigrosine, ten grains; alcohol, two drachms; water, two ounces. Mix, let stand for two days, and filter.

MISTURA ALBA.—According to the *Pharm. Jour. and Trans.*, the *Mist. Alba* of the King's College Hospital Pharmacopœia is composed of magnes. carb., ten grains; magnes sulph., sixty grains; aq. menth. pip., one fluidounce.

SIR THOMAS CHAMBERS recently presented in the House of Commons a petition from "The Order of Daniel," Brompton Square, in favor of sending out a new Arctic expedition, composed of men who did not use either flesh food, alcohol, or tobacco.

DR. ROBERT E. ROGERS has been elected to the chair of Chemistry in the Jefferson Medical College.

Dr. L. Turnbull has been appointed aurist to the Jefferson Medical College Hospital.

Professors Francis Gurney Smith and John Neill have resigned respectively the chairs of Institutes and of Clinical Surgery in the University of Pennsylvania, on account of failure of health.

IN 1875 the horse-butcheries of Paris furnished for public consumption 6865 horses, asses, and mules; in 1876 they furnished 9271, giving 1,685,470 kilogrammes of net meat. At Lyons the number has diminished from 1262 in 1875 to 1088 in 1876. On the 1st of January there were fifty-eight butcheries in Paris and only seven in Lyons. At its meeting January 9, the committee *de la viande de cheval* decreed a silver medal to M. Chambéry, who opened the first horse-butchery in Lyons in 1867, and a gold medal to M. Tétard, who has nine butcheries in Paris. Moreover, the lovers of horse-flesh wish the English to practise its consumption, and M. Decroix, the founder of this committee, has placed at its disposal the sum of eleven hundred francs to encourage the person who shall open and operate the first horse-butchery in London.

M. A. CASSON proposes (*Bull. Gén. de Thérap.*) the following formula: For a solution—salicylic acid, 1 drachm; citrate of ammonia, ½ drachm; rum or brandy, 1 ounce; distilled water, 5 ounces. A tablespoonful of this solution will contain from four to four and a half grains of salicylic acid. The citrate of ammonia is easily prepared by saturating ammonia in a solution of citric acid.

ACCORDING to a series of analyses by chemists in Maine, New York, New Orleans, and other places, the "opium antidote" of S. B. Collins, of La Porte, Indiana, contains a very large percentage of morphia. There seems to be no doubt that all the "opium antidotes" offered to the public are similarly fraudulent.

DR. BROCHARD, of Paris, protests against the use of raw meat as food for infants. In some difficult cases of weaning it may be useful, but he has never found it necessary, and believes that it very frequently produces tænia.

MR. ERASMUS WILSON is to bring Cleopatra's Needle to England at his own expense. It must pay to be a *superficial* doctor abroad.

CHLORAL hydrate is growing in favor as a local anæsthetic and stimulant in cancerous and other painful ulcers. The solution may vary from twenty grains to a drachm to the ounce.

DR. JOHN FINSON, a practising physician in Iceland, states that he has never seen a case of syphilis in a native Icelander.

THE Edinburgh medical students recently howled out a Mr. Childs who had come to Edinburgh from London to enlighten the Scotch public on the enormities of vivisection.

THE famine still rages in India. The mortality in the relief camps is said to be at the rate of 90 per cent. per annum.

IT is stated that a company of London capitalists has been formed to found a seaside city in accordance with the model furnished by Dr. Richardson's Hygeopolis. We trust hard fate will never drive us to live there.

CORRECTION.

In our issue for March 17, No 243, p. 270, the 16th and 17th lines of Dr. Davis's article on Compound Dislocation of the Knee were accidentally transposed after the reading. The sentences should read, "The patella and the head of the tibia were thrown up beyond their natural level, resting on the anterior surface of the femur. The patella had sunk down behind the head of the tibia, into the hollow in front of the joint." Also in the 20th line of the same article, for "tendons of the extensor muscles were," read "tendon of the extensor muscles was".

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM APRIL 22, 1877, TO MAY 5, 1877, INCLUSIVE.

PROMOTIONS.

SLOAN, WM. J., LIEUT.-COLONEL.—To be Colonel and Surgeon, vice McCormick, deceased.

PERIN, G., MAJOR.—To be Lieut.-Colonel and Surgeon, vice Sloan, promoted.

HUNTINGTON, D. L., CAPTAIN and ASSISTANT-SURGEON.—To be Major and Surgeon, vice Perin, promoted.

FORWOOD, W. H., SURGEON.—Assigned to duty at Columbia, S. C. S. O. 83, Department of the South, April 26, 1877.

PHILLIPS, H. J., ASSISTANT-SURGEON.—Granted leave of absence for six months on Surgeon's certificate of disability, with permission to go beyond sea. S. O. 91, A. G. O., April 28, 1877.

HEIZMANN, C. L., ASSISTANT-SURGEON.—Assigned to temporary duty at Fort Wadsworth, N. Y. H. S. O. 96, Military Division of the Atlantic, May 2, 1877.

GIRARD, A. C., ASSISTANT-SURGEON.—Assigned to duty at Fort Randall, D. T. S. O. 54, Department of Dakota, May 1, 1877.

SHUFELDT, R. W., ASSISTANT-SURGEON.—Ordered to Fort Laramie, Wyoming Territory, there to await further orders. S. O. 51, Department of the Platte, April 19, 1877.

MCCORMICK, CHAS., COLONEL and SURGEON.—Died at New York City, April 28, 1877.